Department of Commerce • Technology Administration • National Institute of Standards and Technology
Baldrige National Quality Program
1999

Collin Technologies Feedback Report

Malcolm Baldrige National Quality Award

Collin Technologies Feedback Report

The Collin Technologies Case Study was prepared for use in the 1999 Malcolm Baldrige National Quality Award Examiner Preparation Course. This report provides a sample feedback report for that case study.

The Collin Technologies Case Study describes a fictitious company. There is no connection between the Collin Technologies Case Study and any company, either named Collin Technologies or otherwise. Other organizations cited in the case study (customers, suppliers, etc.) are also fictitious. To learn about successful quality practices based on real companies, you can attend *Quest for Excellence*, the official conference of the Malcolm Baldrige National Quality Award.

INTRODUCTION

Your application for the Malcolm Baldrige National Quality Award has been evaluated. This feedback report[1] contains the findings of the Board of Examiners, including a summary of key themes of the application evaluation, a detailed listing of strengths and opportunities for improvement, and scoring information. Background information on the examination process is also provided.

APPLICATION REVIEW

The application evaluation process (shown in Figure 1) begins with Stage 1, the independent review, in which members of the Board of Examiners are assigned to each of the applications.[2] Assignments are made using the Examiners' areas of expertise and avoiding potential conflicts of interest. Each application is independently evaluated by Examiners who write comments relating to the applicant's strengths and opportunities for improvement and use a scoring system developed for the Award Program. All applicants in all categories (manufacturing, service, small business, education, and health care) go through the Stage 1 evaluation process.

Based on Stage 1 scoring profiles, the Panel of Judges selects applicants to go on to Stage 2, the consensus review. If an applicant is not selected for consensus review, one Examiner reviews the comments written by the other Examiners at Stage 1 and uses those evaluations to prepare a feedback report.

During Stage 2, a team of Examiners, led by a Senior Examiner, conducts a series of conference calls to reach consensus on comments that capture the team's collective view of the applicant's strengths and opportunities for improvement, the score for each Item, and the issues to clarify and verify if the applicant is selected for a site visit. The team documents its comments, scores, and site visit issues in a consensus scorebook. The consensus process is shown in Figure 2.

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[1] The Collin Technologies Feedback Report is written as if the Collin Technologies application reached the consensus stage, but did not receive a site visit.

[2] There were 52 applications received in 1999; all 52 went through Stage 1 of the evaluation process.

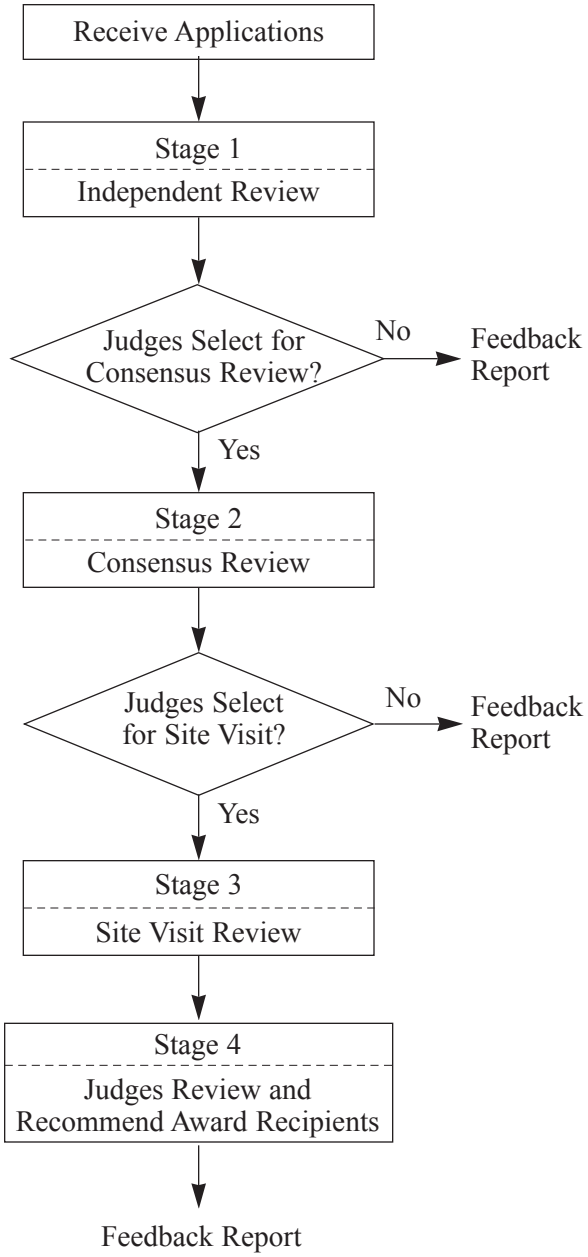

Figure 1 — Application Evaluation Process

Step 1	Step 2	Step 3
Consensus Planning: • Prioritize Items for Discussion • Assign Category/Item Discussion Leaders • Review Findings From the Independent Evaluations	**Consensus Calls:** • Discuss Key Factors • Discuss Categories/Items • Achieve Consensus on Comments, Scores, and Site Visit Issues • Document Findings	**Post-Consensus Call Activities:** • Prepare Final Consensus Report • Prepare Feedback Report

Figure 2 — Consensus Review

After the consensus review process, the Panel of Judges verifies that the evaluation process was properly followed. Following this review, the Judges select applicants to receive a site visit based upon the scoring profiles of all consensus review applicants.

Site visits are conducted for the highest scoring applicants to clarify uncertain points in the application and to verify that the information provided in the application is correct. After the site visit is completed, the team of Examiners prepares a final Site Visit Scorebook. The site visit examination process is shown in Figure 3.

Step 1	Step 2	Step 3
Team Preparation: • Review Consensus Findings • Review Site Visit Issues • Plan Site Visit	**Site Visit:** • Make/Receive Presentations • Conduct Interviews • Record Observations • Review Records	**Site Visit Scorebook:** • Resolve Issues • Summarize Findings • Finalize Comments • Prepare Final Site Visit Scorebook • Prepare Feedback Report

Figure 3 — Site Visit Review

Application reports, consensus scorebooks, and site visit scorebooks for all applicants receiving a site visit are forwarded to the Panel of Judges who make final recommendations on which applicants should receive an Award. Applications in each of the five Award categories are discussed separately. Within each category, the Judges discuss and vote to keep

or eliminate each applicant. The Judges then rank order the applicants and eliminate the lowest ranking ones. This process is repeated until the top three applicants remain. Next, the Judges decide whether each of the top applicants should be recommended as an Award recipient based on an "absolute" standard: the overall excellence and the appropriateness of the applicant as a national role model. The process is repeated for each of the remaining categories. The Judges' evaluation process is shown in Figure 4.

Step 1	Step 2	Step 3
Panel of Judges' Review: • Application Reports • Consensus Scorebooks • Site Visit Scorebooks • Feedback Reports	**Evaluation by Category:** • Manufacturing • Service • Small Business • Education • Health Care	**Assessment of Top Organizations:** • Overall Strengths/ Opportunities for Improvement • Appropriateness as National Model of Performance Excellence

Figure 4 — Judges' Review

Judges do not have access to applicant information and do not vote on applications in which they have a competing or conflicting interest, or in which they have a private or special interest. This includes interests such as employment or client relationship, a financial interest, or a personal or family relationship. All conflicts are reviewed and discussed so that Judges are aware of their own and others' limitations on access to information and participation in discussions and voting.

SCORING

The scoring system used to score each Item is designed to differentiate the applicants in the Stage 1 and Stage 2 reviews and to facilitate feedback. The Scoring Guidelines (shown in Figure 5) are based on: (1) evidence that a performance excellence system is in place; (2) the depth and breadth of its deployment; and (3) the results it is achieving.

In the feedback report, the applicant receives a percentage range for each Criteria Category (Leadership, Strategic Planning, etc.). The percentage range is based on the Scoring Guidelines which describe the characteristics typically associated with specific percentage ranges.

Applicant total scores fall into one of eight scoring bands. Each band corresponds to a descriptor associated with that scoring range. Figure 6 provides scoring information on the percentage of applicants scoring in each band at Stage 1. Scoring adjustments resulting from the consensus review and site visit stages are not reflected in the distribution. Site visit teams find that some applicants are stronger in some or all of the Categories than was indicated by their original score; others are weaker. Consequently, some applicants may move up in range if they had been scored again, while others may have moved down.

SCORING GUIDELINES

SCORE	APPROACH/DEPLOYMENT
0%	▪ no systematic approach evident; anecdotal information
10% to 20%	▪ beginning of a systematic approach to the basic purposes of the Item ▪ major gaps exist in deployment that would inhibit progress in achieving the basic purposes of the Item ▪ early stages of a transition from reacting to problems to a general improvement orientation
30% to 40%	▪ a sound, systematic approach, responsive to the basic purposes of the Item ▪ approach is deployed, although some areas or work units are in early stages of deployment ▪ beginning of a systematic approach to evaluation and improvement of basic Item processes
50% to 60%	▪ a sound, systematic approach, responsive to the overall purposes of the Item ▪ approach is well-deployed, although deployment may vary in some areas or work units ▪ a fact-based, systematic evaluation and improvement process is in place for basic Item processes ▪ approach is aligned with basic organizational needs identified in the other Criteria Categories
70% to 80%	▪ a sound, systematic approach, responsive to the multiple requirements of the Item ▪ approach is well-deployed, with no significant gaps ▪ a fact-based, systematic evaluation and improvement process and organizational learning/sharing are key management tools; clear evidence of refinement and improved integration as a result of organizational-level analysis and sharing ▪ approach is well-integrated with organizational needs identified in the other Criteria Categories
90% to 100%	▪ a sound, systematic approach, fully responsive to all the requirements of the Item ▪ approach is fully deployed without significant weaknesses or gaps in any areas or work units ▪ a very strong, fact-based, systematic evaluation and improvement process and extensive organizational learning/sharing are key management tools; strong refinement and integration, backed by excellent organizational-level analysis and sharing ▪ approach is fully integrated with organizational needs identified in the other Criteria Categories

SCORE	RESULTS
0%	▪ no results or poor results in areas reported
10% to 20%	▪ some improvements *and/or* early good performance levels in a few areas ▪ results not reported for many to most areas of importance to the organization's key business requirements
30% to 40%	▪ improvements *and/or* good performance levels in many areas of importance to the organization's key business requirements ▪ early stages of developing trends and obtaining comparative information ▪ results reported for many to most areas of importance to the organization's key business requirements
50% to 60%	▪ improvement trends *and/or* good performance levels reported for most areas of importance to the organization's key business requirements ▪ no pattern of adverse trends and no poor performance levels in areas of importance to the organization's key business requirements ▪ some trends *and/or* current performance levels — evaluated against relevant comparisons *and/or* benchmarks — show areas of strength *and/or* good to very good relative performance levels ▪ business results address most key customer, market, and process requirements
70% to 80%	▪ current performance is good to excellent in areas of importance to the organization's key business requirements ▪ most improvement trends *and/or* current performance levels are sustained ▪ many to most trends *and/or* current performance levels — evaluated against relevant comparisons *and/or* benchmarks — show areas of leadership and very good relative performance levels ▪ business results address most key customer, market, process, and action plan requirements
90% to 100%	▪ current performance is excellent in most areas of importance to the organization's key business requirements ▪ excellent improvement trends *and/or* sustained excellent performance levels in most areas ▪ evidence of industry and benchmark leadership demonstrated in many areas ▪ business results fully address key customer, market, process, and action plan requirements

Figure 5

1999 Scoring Band Descriptors

Band	Band Number	% Applicants in Band[3]	Descriptors
0-250	1	**	Early stages of developing and implementing approaches to Category requirements. Important gaps exist in most Categories.
251-350	2	**	Beginning of a systematic approach responsive to the basic purposes of the Items, but major gaps exist in approach and deployment in some Categories. Early stages of obtaining results stemming from approaches.
351-450	3	**	A systematic approach responsive to the basic purposes of most Items, but deployment in some key Areas to Address is still too early to demonstrate results. Early improvement trends in areas of importance to key organizational requirements.
451-550	4	**	Effective approaches to many Areas to Address, but deployment may vary in some areas or work units. Fact-based evaluation and improvement occur responsive to the basic purposes of the Item. Results address key customer/stakeholder and process requirements, and demonstrate some areas of strength and/or good performance.
551-650	5	**	A sound, systematic approach responsive to many of the Areas to Address, with a fact-based evaluation and improvement process in place in key areas. No major gaps in deployment, and a commitment exists to organizational learning and sharing. Improvement trends and/or good performance reported for most areas of importance. Results address most key customer/stakeholder and process requirements and demonstrate areas of strength.
651-750	6	**	Refined approaches, including key measures, good deployment, and very good results in most areas. Organizational alignment, learning, and sharing are key management tools. Some outstanding activities and results that address customer/stakeholder, process, and action plan requirements. May be "industry"[4] leader in some areas.
751-875	7	**	Refined approaches, excellent deployment, and good to excellent performance improvement and levels demonstrated in most areas. Good to excellent integration and alignment, with organizational analysis, learning, and sharing of best practices as key management strategies. "Industry" leadership and some benchmark leadership demonstrated in results that address most key customer/stakeholder, process, and action plan requirements.
876-1000	8	**	Outstanding approaches, full deployment, excellent and sustained performance results. Excellent integration and alignment, with organizational analysis, learning, and sharing of best practices pervasive. National and world leadership in results that fully address key customer/stakeholder, process, and action plan requirements.

Figure 6

[3] Percentages are based on scores from the Stage 1 review.

[4] "Industry" refers to other organizations performing substantially the same functions, thereby facilitating direct comparisons.

KEY THEMES

Collin Technologies (Collin) scored in band 5 in the consensus review of written applications for the Malcolm Baldrige National Quality Award. For an explanation of the scoring bands, please refer to Figure 6, "1999 Scoring Band Descriptors."

Collin demonstrates a sound, systematic approach responsive to many of the Areas to Address, with a fact-based evaluation and improvement process in place in key areas. There are no major gaps in deployment, and a commitment exists to organizational learning and sharing. Improvement trends and/or good performance are reported for most areas of importance. Results address most key customer/stakeholder and process requirements and demonstrate areas of strength.

a. The most important strengths or outstanding practices (of potential value to other organizations) are:

- The Leadership Team ensures alignment of all EOs and all facilities to the mission and strategic direction through a systematic and well-deployed leadership system that includes the planning and performance review processes. The senior leaders serve as role models in reinforcing the direction and Core Values of Collin through face-to-face communication with EOs and participation on teams.

- Collin takes a proactive approach to identifying and addressing the environmental, health, and safety risks associated with its industry.

- The Perennial Planning Process (PPP) affords Collin a view of short-term opportunities and risks as well as a longer-term strategic view. The continuous nature of the PPP allows Collin to identify and respond to changes in the market and the industry, to realign goals and actions, and to allocate resources.

- Knowledge of the market and customer segments is systematically integrated into many of Collin's approaches, including product design and relationship management. Customer focus begins with Collin's mission and is reinforced through the Core Values.

- Collin uses internal and external partnerships to accomplish strategic objectives and to fulfill the Core Values. Examples of these partnerships include the preferred supplier program, establishment of EOs, and ongoing collaboration with numerous educational institutions.

- CAIN is a critical component of Collin's performance management system and serves as a key communication vehicle for the senior leaders, EOs, customers, and preferred suppliers. Progress against goals and action plans is tracked via CAIN, and a subset of the Balanced Scorecard metrics aligned to the Strategic Business Plan is available on-line.

- Collin uses comparative data related to many of its key processes to establish objectives and to drive organizational improvement.

- Collin emphasizes quality in its design processes through its use of Integrated Product Development Teams (IPDTs) and robust process capability studies. The process laboratory provides extensive testing capabilities prior to product release into production, thereby preventing problems that could surface "downstream" and adversely affect the ability of Collin to meet customer and operational requirements.

- The integration of technology and automation with human capability supports Collin's objective to achieve market leadership. Examples of this innovative integration include the development of the proprietary Chemically Bonded Deposition Process and the patented microfilter process for the elimination of Volatile Organic Compound emissions.

b. The most significant concerns, weaknesses, or vulnerabilities are:

- Collin's understanding of potential risks associated with its plan for international growth is unclear. For example, the collection and use of information and data on key potential competitors and customers for the European market are not evident in the PPP.

- It is not clear how Collin ensures the effective deployment of its key approaches to the Koga facility. In addition, deployment of human resource practices to different categories and locations of employees is not evident. Rather, most approaches consider EOs as a single category with no differentiation among knowledge, skills, and other factors contributing to EO motivation, satisfaction, and well-being.

- The processes for managing non-preferred suppliers appear to be less systematic and preventive than those for preferred suppliers, even though non-preferred suppliers account for 50% of Collin's supplier base.

- Although Collin has a Core Value to improve business and relationships with customers, it is not clear how Collin manages its current customer base, or how it plans to address the needs of an expanding customer base. While Collin has 2700 customers worldwide, there is a relatively small infrastructure to support the processes needed to ensure customer satisfaction. For instance, there are only six international sales coordinators to support customers in Europe and Japan. Similarly, there is a small number of Customer Contact EOs.

- Although Collin has a systematic process for managing the design and production of products, it is not evident that a similar process exists for managing the design and delivery of service processes. For example, Collin has not identified the key service features of its business transactions with customers.

- Cycles of evaluation and improvement are not evident in the description of some support approaches. The lack of an embedded review and improvement phase in key support processes makes it difficult to assess the ability of Collin to improve processes that contribute to its success.

- Although Collin has stated its commitment to move EOs from being skill-based workers to knowledge-based workers, it is not clear what specific approaches are used to achieve this strategy or to encourage employee learning and innovation.

c. Considering the organization's key business factors, the most significant strengths, vulnerabilities, and/or gaps (data, comparisons, linkages) found in Category 7 are:

- The majority of customer satisfaction, market, and financial results are good to excellent, and Collin is an industry leader in several key areas, including financial performance and overall customer satisfaction. For the past four to five years, results demonstrate sustained improvement trends for many of Collin's key performance indicators.

- Collin has demonstrated strong and sustained performance in employee safety, well-being, and satisfaction measures and is better than the industry average in key measures important to EOs.

- Results of operational effectiveness tied to Collin's strategic objectives demonstrate good-to-excellent and sustained levels of performance.

- Comparative data are not available for some key measures, particularly those related to human resources, making it difficult to evaluate Collin's competitiveness in areas critical to its mission to obtain and retain a capable work force and to provide opportunities to improve EO's careers.

- In keeping with the Core Value that EOs are Collin's most valuable asset, a fully deployed team environment cuts across all levels of EOs and all facilities, and integrates customers and preferred suppliers on some teams. However, the effectiveness of teams in achieving Collin's goals and for encouraging learning and innovation is not measured, making it difficult to assess how Collin evaluates and improves the team process.

DETAILS OF STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT

Category 1 Leadership

Your score in this Criteria Category for the consensus stage is in the 50–60 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- The CEO and Leadership Team provide direction for the organization through the mission statement and Core Values. The Leadership Team uses the Perennial Planning Process (PPP) to identify strategies and systematically reviews performance against goals to ensure alignment of the organization with goals and to make adjustments to plan. Information used in these reviews includes results against the Balanced Scorecard metrics, Baldrige self-assessments, and ISO audits. Business opportunities are identified and decisions are made based on a systematic analysis and prioritization process.

- Senior leaders are personally and visibly involved in creating an empowered work force and a learning environment that can rapidly react to changing global markets. They leverage a culturally diverse work force and demonstrate good citizenship within the community. Members of the Leadership Team lead Stakeholder Teams, spend time each day with employees to gather ideas and concerns, and participate in the Executive Replacement Program to understand the challenges faced by EOs on their jobs.

- The Leadership Team reflects on the effectiveness of management practices at the semi-annual off-site meeting by reviewing inputs from all stakeholder groups. As a result of this feedback and review process, the Leadership Team systematically identifies and implements improvements to how it leads and manages the business. Evidence is provided demonstrating a cycle of refinement to the leadership system based on this process.

- Consistent with Collin's goal for a leadership position in the industry, environmental programs are proactive and innovative. Teams proactively address future societal impacts in the areas of public health, environmental improvement, waste management, and energy conservation risk management. Teams helped Collin sustain a ten-year history without violations, fines, or regulatory sanctions. In support of its strategy for achieving solutions through technology, Collin shares its patented Class 1 Microfilter technology with customers and suppliers to help reduce emissions of Volatile Organic Compounds.

- This small company strongly supports local community and educational efforts. EOs receive one paid day per month for community activities associated with education, government, health, and the general community. Educational partnerships exist with community and state colleges and universities in the United States and Japan. Computer and company labs are made available to students from all age groups, including kindergarten through college.

OPPORTUNITIES FOR IMPROVEMENT

- It is not clear how the Leadership Team includes Koga senior managers in Stakeholder Teams or how the Leadership Team in Nashville obtains and uses input from the daily sessions with EOs in Koga. Since the Koga facility represents 30% of Collin's employees and 40% of its physical assets, it is difficult to assess the effectiveness of the leadership system in aligning all managers, EOs, and activities to the direction of Collin if it is not fully deployed at all locations.

- Although Collin identifies international growth as a key objective, how information about future competitors and new market opportunities from targeted regions is considered during the Leadership Team review process is not evident. Without a more complete description of the type of information and the process for how competitive information is reviewed, it is difficult to assess the effectiveness of the Leadership Team in ensuring Collin's ability to remain competitive.

- It is not clear how Collin addresses public concerns associated with the future development of products, services, and operations, especially those associated with future growth in Europe. Without a description of how future risks are managed, it is difficult to assess the effectiveness of Collin in responding to a rapidly changing industry and highly regulated environment.

Category 2 Strategic Planning

Your score in this Criteria Category for the consensus stage is in the 50–60 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- The seven-step Perennial Planning Process (PPP) aligns strategies to the mission, enables Collin to address shifts in strategic direction within the industry, and distributes the impact of major environmental events over time. The PPP incorporates customer and market data; competitive, technology, and risk assessments; and human resource, operational, and supplier capabilities.

- Customers, preferred suppliers, and other key stakeholders are involved in the planning process to ensure their requirements are reflected in the strategic initiatives and action plans. In turn, stakeholder involvement provides additional sources of competitive and technological information.

- Short- and longer-term objectives, strategies, and action plans are incorporated in the Strategic Business Plan, documented in the electronic Red Book, and cascaded through all levels of Collin through the Performance Management Cycle. Eight of the twelve strategic objectives are presented in Figure 2.1-3 and reflect a focus on cycle time, delivery, Y2K, product cost, and supplier management. To ensure effective use of capital and human resources, allocation of resources is determined as progress against goals is reviewed and mid-course changes in direction are required.

OPPORTUNITIES FOR IMPROVEMENT

- Little information is provided on how Collin's planning process takes into consideration financial risks and risks associated with international expansion. Without a clear description of how Collin evaluates and integrates financial and market expansion risks, it is difficult to assess the effectiveness of Collin's plans to achieve market leadership.

- Although human resource capabilities are identified as critical enablers of Collin's strategic intent, Collin does not provide human resource plans and requirements. Without a full description of human resource plans, it is difficult to understand how Collin effectively plans to achieve its mission for "leadership positions of excellence" for EOs.

- It is not clear how the 5 elements of the Strategic Business Plan are translated into the 12 key strategic objectives. Without a description of how Collin establishes the objectives shown in Figure 2.1-3 by taking into consideration key factors such as the competitive environment, assessment of future technology, potential risks, and various capabilities, it is difficult to assess the effectiveness of the process in ensuring alignment of actions to meet Collin's strategic intent.

- Since limited Balanced Scorecard measures and competitive projections are identified for company performance, it is difficult to assess Collin's ability to evaluate progress against goals and maintain competitiveness in the future, especially given the plans for expansion and the goal to achieve "leadership excellence" for all key stakeholders.

Category 3 Customer and Market Focus

Your score in this Criteria Category for the consensus stage is in the 70–80 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- Markets are segmented based on customer requirements, and the business is organized around these segments. Collin obtains information about current and potential customer requirements in each of the segments through a variety of methods, including surveys, studies, employee interaction, and industry meetings. These methods provide Collin with broad, validated, and continuous input to stay current with market changes in its fast paced industry.

- The closed-loop, computer-based (CAIN) complaint and follow-up system provides instant customer access and rapid action. Complaints are immediately recorded and routed to sales coordinators, and an automatic reminder ensures that EOs are aware of open issues. The CAIN system also automatically notifies sales coordinators when a shipment occurs and sends a prompt to customers requesting that they log on and fill out a feedback survey. This encourages rapid feedback when shipments are made.

- Partnering between customers and Collin in strategic planning, product design, and Baldrige review activities builds understanding about each other's needs. Collin also assigns specific internal points of contact for customers and provides many avenues for customer access. Collin maintains historical data in CAIN about each customer relationship to provide EOs with information to increase understanding of needs and experiences with a particular customer.

- Customer contact teams define customer contact requirements based on what they learn from customer feedback and benchmarking, and establish service standards based on the needs of the most demanding customer segment. EOs get feedback about their performance from CAIN to help them meet goals, and customer service performance standards are reviewed and revised to stimulate improvements to meet customers' changing expectations.

- Collin uses internal and external surveys to provide information on customer satisfaction levels. Customers rate performance on segment requirements, determine importance of segmentation attributes, and compare Collin to other multilayer-board manufacturers. Collin also surveys multiple contact points within the customer organization to provide additional data for analyzing different facets of customer satisfaction.

- Business Segment Managers and customers review "listening and learning" methods and customer relationship processes and then make refinements based on these reviews. As a result of the many assessments, improvements have been implemented, and include changes to service standards and the satisfaction survey process.

OPPORTUNITIES FOR IMPROVEMENT

- It is not clear that Collin completely assesses differences in its market segments and customer groups to determine key requirements and drivers of purchase decisions. Consideration of the unique needs of geographical customers and markets is not evident, making it unclear how well Collin understands the international markets in which it expects future growth. It is also not defined which approaches to listening and access are deployed to international customers, making it difficult to know whether global customers' needs are being fully assessed and met.

- How Collin takes a long-term view of market changes is not described. Without this information, it is difficult to understand how Collin uses information obtained from participation in conferences, trade shows, and customer strategic planning to determine or project key product features and their relative importance to customers for future marketing, product planning, or other business development.

Category 4 Information and Analysis

Your score in this Criteria Category for the consensus stage is in the 50–60 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- The CAIN performance management system (Figure 4.1-1) is one of Collin's key strengths and is also a key capability. CAIN is a distributed information system that is well deployed across all facilities and provides for the input, tracking, and analysis of performance and predictive data that are aligned to Collin's goals, plans, strategic and day-to-day actions, and decision-making processes.

- A Balanced Scorecard (BSC) process provides the Leadership Team with analyzed and summarized performance data to assess progress against goals. Stakeholder Teams use a 5-Step process to systematically analyze BSC results in preparation for the bimonthly Leadership Team performance review. BSC measures must meet two criteria: (1) they must be cost, time, or quality related, and (2) they must either be preventive or link to a strategic improvement strategy.

- The reliability and integrity of information and data are assured through automation and supporting practices. Consistent with the concept of deployment of technology to drive prevention-based improvements, this approach further enhances effective and timely decision-making. Improvements to the information system are based on feedback from users, benchmarking, and an annual survey.

- To maintain competitive leadership and drive breakthrough performance, Collin tracks competitive comparisons and benchmarks. The Benchmark Team is a dedicated cross-functional team that issues biannual gap analyses for leadership review. This approach ensures consistency of focus on the use of comparative information both as an improvement tool and as a systematic review to determine relevancy and currency.

- Collin has developed the 5-Step analysis process to ensure that decision-making is consistent and reliable. This tool includes comparison to benchmarks and competitor results, gap analysis, and closed-loop corrective action. In this way, analysis and evaluation follow a systematic and consistent approach across the organization.

OPPORTUNITIES FOR IMPROVEMENT

- The process for how Collin uses surveys and information system competitions to evaluate and improve the performance of the CAIN system is not evident. Without a description of the process, it is difficult to assess the effectiveness of the system in keeping current with emerging technology and changing business needs.

- The leadership approach to review top-level indicators of the BSC does not appear to be applied to the review and evaluation of operational performance measures at other levels of Collin. Without a description of how Collin conducts operational and support performance reviews, it is difficult to assess how effectively Collin evaluates and improves its ability to respond to changes in the marketplace and to customer expectations.

Category 5 Human Resource Focus

Your score in this Criteria Category for the consensus stage is in the 50–60 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- Collin is designing its work systems with a focus on a knowledge- and team-based approach for accomplishing and managing companywide work and processes. The Human Resource Council oversees the functional aspects of the work system, and the EOs support the team climate (Figure 5.1-1). This is achieved through a combination of team structures that includes Integrated Product Development Teams (IPDTs) and Process Support Teams (PSTs). These development programs foster an environment for individual contribution within a team-based structure to achieve company goals and improve processes and quality.

- A three-step Performance Management Cycle (Figure 5.1-2) is used to link business plans and strategies from the PPP to individual EO performance. Assessments, provided quarterly during coaching feedback sessions, are based on the use of a 360-degree feedback tool, one-on-one interviews, and a gap analysis. Moreover, annual compensation for EOs is based upon the same formula as compensation for members of the Leadership Team. Alignment of incentives with the achievement of essential organizational objectives is the basic thrust for consistency between work structures and processes.

- Five functional career paths serve as a structure for several employee categories within the organization. The career paths are organized towards the technical, managerial, operations, quality management, and administrative clusters. An Attribute Model, along with the Competency Model, is used to ensure currency with business and individual needs. Employee development and education and training programs are linked to this career path design and enable Collin to match employment needs with recruitment and retention efforts.

- A formal written Employee Satisfaction Survey, designed by an external contractor and internal focus group, is conducted every three months. In addition, satisfaction and well-being are also determined by regularly scheduled company meetings, one-on-one meetings, skip-level reviews, focus groups, and exit interviews. This information, along with internal Baldrige assessment results, is fed into the PPP (Figure 2.1-1), the Product Development Process (Figure 6.1-1), and the Performance Management Cycle process (Figure 5.1-2) to ensure alignment with goals, customer requirements, and the professional development of EOs.

OPPORTUNITIES FOR IMPROVEMENT

- Although Collin has developed several team structures, there is minimal evidence of how its teaming approaches allow for rapid response and flexibility in each of its markets. Without this information, it is difficult to assess how effective Collin's work system is in promoting cooperation, collaboration, and flexibility to keep current with the critical business needs and changes in its industry.

- While Collin uses a Human Resource Capabilities Assessment process, there is no evidence that there is a human resource action plan that identifies training requirements for its EOs. Without these plans, it is not certain how Collin is able to minimize resource capability risks in order to succeed in the future market arena. In addition, information is not provided on the degree of proficiency and required training needed for specific employee categories in order for the organization to maintain and surpass customer expectations in product performance, product reliability, and quality.

- While a set of Environmental Health, Safety, and Security (EHS&S) standards exists, it is unclear whether EOs had input in their creation or identification. In addition, it is unclear whether the nine standards mentioned meet or exceed minimum regulatory and industry requirements and if targets for improvement have been established.

- Factors of employee well-being are not enumerated, nor is it clear that measures or targets for well-being are identified for Collin as a whole or for various work units. This may prevent the development of a systematic approach to continuous improvement.

Category 6 Process Management

Your score in this Criteria Category for the consensus stage is in the 50–60 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- The Product Development Process (PDP) uses cross-functional teams and customer input to ensure that products meet customer requirements. The PDP is incorporated into the product life cycle to ensure smooth and rapid introduction of products using processes with Cpk greater than 2.0. This approach has enabled Collin to meet key customer requirements while reducing cycle time.

- Customer design or process changes are incorporated instantly via the CAIN system through which preferred customers can directly make their changes. All information collected during the design and production phases, including input from learnings, new technologies, customers, and suppliers, is maintained in the CAIN system. Deployment of information via CAIN ensures timeliness of information transfer across the organization and integration of performance results with goals and objectives.

- Collin's partnering approach provides for high levels of supplier involvement in key areas such as the PPP, PDP, and training. In addition, preferred suppliers have direct access to the CAIN system and serve on IPDTs. This approach assists in the alignment of suppliers with Collin's strategic goals and objectives.

- Collin's robust design and testing approach prior to production release helps to ensure its reputation as a technology leader. Through the use of its process laboratory, Collin gathers the latest technologies from its customers and is aided in trouble-free product launches.

OPPORTUNITIES FOR IMPROVEMENT

- While some examples of improvements to processes are provided, it is not clear how Collin systematically evaluates and assesses the effectiveness of its overall approaches to processes. Without an understanding of how design and delivery processes are evaluated and improved, it is unclear how Collin achieves better process performance and improvements to its products and services and to its support and supplier processes.

- Collin's approach for designing support processes is not described. While Collin uses Process Support Teams (PSTs) to manage support processes, their involvement in designing support processes is not discussed. Without an understanding of support process design and development, it is difficult to determine how Collin ensures that its processes meet the needs of its suppliers, customers, EOs, and other stakeholders.

- Although Collin achieves a high level of supplier involvement through its preferred supplier program, there is minimal support for non-preferred suppliers. Non-preferred suppliers do not participate in the high level of training and other partnering activities extended to preferred suppliers. Since 50% of Collin's suppliers are non-preferred, it is difficult to understand how Collin ensures that its strategic objectives of quality, reliability, and rapid response are achieved.

Category 7 Business Results

Your score in this Criteria Category for the consensus stage is in the 70–80 percentage range. (Refer to Figure 5, "Scoring Guidelines.")

STRENGTHS

- Overall, business results in most areas of importance to Collin reflect sustained improvement trends and good-to-very-good relative performance levels.

- Customer satisfaction in all key business segments shows favorable current levels of performance and sustained improvement trends since 1994. Collin outperformed the competition in all areas rated most important by customers, including overall satisfaction, product quality, on-time delivery, and field quality.

- For the past five years, financial performance trends for revenue growth, profitability, return on net assets, return on revenues, and net asset turnover show sustained improvement trends. For the past four years, trends demonstrate a leadership position in the industry. Overall, Collin's good-to-excellent financial results reflect success in its ability to deliver stakeholder value and to expand automation and technology, a key strategy in improving its niche in the market.

- Employee satisfaction results show sustained improvement and favorable trends overall in the areas most important to EOs. Satisfaction with personal development opportunities demonstrates that for the past five years Collin has done increasingly better in every opportunity area measured. Since 1994, hazard prevention has improved by 50%, and with a zero incident rate, Collin's safety performance has surpassed the industry. Employee turnover is one-third the industry average.

- Supplier performance in most key measures shows favorable current levels and sustained improvement trends since 1994. Supplier quality for product and support material improved at both facilities and is at or near benchmark and goal levels of performance. These results reflect an improvement in Collin's ability to meet key customer requirements through supplier management.

- Overall company performance in key customer requirements and operational goals, including accuracy, cycle time, cost, and schedule, is currently good to excellent and demonstrates sustained improvement trends since 1994. Collin responds to changing customer requirements while maintaining competitive price levels as a result of improvements in production cost.

OPPORTUNITIES FOR IMPROVEMENT

- Although competitive price, short delivery time, rapid response, cutting-edge technology, and stable dimensions are identified as key customer requirements, current and comparative customer satisfaction results are not provided, making it difficult to assess the effectiveness of Collin in meeting customer requirements and in determining Collin's relative competitive position.

- Market share growth by business segment and region does not show competitive comparisons, making it difficult to understand how Collin evaluates and improves its competitiveness in each of these markets.

- Employee satisfaction, safety, and turnover rates are not provided by level of employee or location, making it difficult to assess the effectiveness of human resource programs in addressing a diverse and geographically dispersed work force. Comparisons for employee satisfaction ratings are not provided, making it difficult to understand how Collin evaluates its ability to obtain and retain a qualified work force relative to its competitors.

- Supplier results are not provided for technology and continuous improvement, two areas identified as key for meeting customer expectations. Comparative measures are not provided for material costs, and benchmarks are not defined, making it difficult to understand how Collin evaluates performance relative to competitors and benchmarks.

1.1 Organizational Leadership

STRENGTHS

- The CEO and Leadership Team identified Collin's mission, strategic direction, and five Core Values. Customer and stakeholder balance is achieved through five Stakeholder Teams. Key stakeholders are identified as customers, EOs, suppliers, shareholders, and the community. Members of the Leadership Team chair the Stakeholder Teams. Team members represent all levels and areas of Collin and serve for one year. This approach provides senior management focus and continuous emphasis on all key stakeholders consistent with Collin's values.

- Empowerment and employee involvement are promoted through a stated commitment to a knowledge-oriented work force rather than a skill-oriented work force and are reinforced by full EO access to the information available on CAIN. In addition, the Leadership Team spends one hour a day talking to EOs to gather ideas and concerns. The assignment of senior managers as key customer liaisons helps employees gain a deeper understanding of customers and their issues. Collin also uses the quarterly Executive Replacement Program to understand the challenges faced by employees in their jobs.

- The Leadership Team uses the Perennial Planning Process (PPP) (Figure 2.1-1) to establish direction and yearly stakeholder objectives. The PPP involves all levels of the organization in the consolidation of inputs from all key stakeholders. Annual goals are established in the PPP and are implemented through the biweekly Stakeholder Team meetings. This process is deployed to all EOs through the Performance Management Cycle (Figure 5.1-2), thereby ensuring alignment of the organization to the goals and direction of Collin.

- A systematic approach to assess organizational health, competitive performance, and progress toward goals is well deployed. Every two months, Stakeholder Team reviews are conducted by the Leadership Team. Results against the Balanced Scorecard (BSC) metrics (Figure 1.1-4) are reviewed according to past progress, current status, plans and targets, and technology goals. The Leadership Team also uses information from Baldrige self-assessments, ISO 9001, and ISO 14000 audits in these reviews.

- As part of the semiannual Leadership Team off-site meeting, business opportunities are weighed against a prioritization/decision matrix (Figure 1.1-5) before assigning accountability to Stakeholder Teams. The prioritization matrix addresses six key leveraging aspects in the decision-making process. These include ease of implementation, cost to complete, anticipated return, impact to stakeholder, intensity of labor, and the use of technology as a solution. This approach aligns Collin's decision making process with Collin's Core Values. Examples of recent findings, matrix scores, and innovation opportunities are provided in Figure 1.1-6.

- The Leadership Team reflects on the effectiveness of leadership practices at the semiannual off-site meeting by reviewing inputs from all five stakeholder groups. As a result of this feedback and review process, the Leadership Team systematically identifies and implements improvements to its management practices.

OPPORTUNITIES FOR IMPROVEMENT

- Although the Koga facility represents 30% of Collin's EOs and 40% of its physical assets, it is not clear how the Leadership Team includes senior managers from the Koga facility in the Stakeholder Teams or how input from the daily sessions with EOs in Koga is communicated to the Leadership Team in Nashville. Therefore, a gap in the deployment of the leadership system to this facility may affect the effectiveness of leaders to provide direction to all key business areas.

- Although Collin introduced a 360-degree assessment in 1999 based on the Competency Model that provides members of the Leadership Team and directors with individual feedback, it is in the early stages of deployment. Therefore, it is difficult to assess the effectiveness of this approach to systematically improve leadership.

- Although Collin has identified international growth as a key objective, how information about future competitors and new market opportunities from targeted regions is considered during the review process is not evident. Without a more complete description of how competitive information is reviewed, it is difficult to assess the effectiveness of the Leadership Team in ensuring Collin's ability to remain competitive.

1.2 Public Responsibility and Citizenship

STRENGTHS

- Teams proactively address future societal impacts in the areas of Public Health, Environmental Improvement, Waste Management, and Energy Conservation Risk Management. Collin has a sustained history of no violations, fines, or sanctions from any regulatory agency. The teams identify risks, define applicable practices and measures, establish targets and goals in key areas, and share these practices with suppliers (Figure 1.2-1).

- In support of the strategy to apply technology to solve problems, Collin has developed a Class 1 Microfilter technology addressing Volatile Organic Compounds (VOCs). This process is acknowledged by the Environmental Protection Agency as the "Best Available Technology" for reducing VOC emissions. Collin is sharing this patented technology with its customer and supplier base.

- All employees are required to attend a four-hour class on business ethics and the Business Conduct Procedure. The review of the Business Conduct Procedure covers policy related to customer interactions, gifts, outside work, competitors, harassment, supplier relations, and software use. An example of an action that Collin has taken to ensure the ethical use of software throughout the business is use of its information technology system to scan for unlicensed software in its computer network.

- Collin provides support and works to strengthen the community in four key community areas: education, government, health, and the general community. EOs ranging from senior managers to individual contributors are actively encouraged to strengthen the community. Collin demonstrates strong commitment to the community by giving each EO up to one paid day per month to support activities related to the four key community areas.

- Collin demonstrates strong support for local educational efforts. In partnership with community and state colleges, senior executives conduct presentations on circuit board technology at Peak State University and the University of Koga. Collin provides learning opportunities for co-op students who are hired each summer. The computer center is open to local kindergarten through 12th grade students for computer training by EOs; Collin lab is open for students' use in designing and fabricating circuit boards.

OPPORTUNITIES FOR IMPROVEMENT

- Other than the one-time training event on the Business Conduct Procedure, it is not clear how Collin systematically and consistently communicates, reinforces, and ensures compliance with ethical requirements in all business practices worldwide.

- It is not clear how Collin addresses public concerns associated with the future development of products, services, and operations, especially those associated with future growth in Europe. Without a description of how future risks are managed, it is difficult to assess the effectiveness of Collin in responding to a rapidly changing industry and highly regulated environment.

- Although one of the Core Values focuses on improving the community, it is not evident that a systematic process is used by the Leadership Team to evaluate and improve community involvement, making it difficult to assess how these activities are consistent with company goals and values. Also, it is unclear how Stakeholder Teams address community activities. How community needs are determined for the Nashville and Koga communities is not described.

2.1 Strategy Development

STRENGTHS

- The seven-step Perennial Planning Process (PPP) (Figure 2.1-1) is a comprehensive and continuous planning approach that aligns strategies to the mission, enables Collin to address shifts in strategic direction within the industry, and distributes the impact of major environmental events on planning over time. The PPP incorporates eight categories of input: customer data, market data, competitive assessments, technology assessments, risk assessments, human resource capabilities, operational capabilities, and supplier capabilities. Collin distributes input-generating activities throughout the year and monitors progress against plan on a quarterly basis.

- Customers, preferred suppliers, EOs, and other stakeholders are involved in the planning process to ensure that stakeholder requirements are reflected in the strategic initiatives and action plans. Customers and suppliers provide additional sources of competitive and technological information through this process. Collin also uses third-party studies to provide objective information on the competition and state-of-the-art technology.

- Customer satisfaction and market surveys, Baldrige assessments, and sales coordinator assessments are used in the planning process to determine customer, market, and competitive needs. Collin collects and distributes this information throughout the year and monitors progress against plan on a quarterly basis.

- Some key strategic objectives and goals (Figures 2.1-3 and 2.2-1) identify specific performance targets. Short-term goals are identified in the business segment action plans, and longer-term goals are developed through the Strategic Business Plan. Some measurable performance goals for the short and longer term are identified in Figure 2.1-3. Leadership Team members, process owners, and team leaders analyze data to select the most beneficial strategies for the stakeholders and the organization.

OPPORTUNITIES FOR IMPROVEMENT

- Little information is provided on how Collin's planning process takes into consideration financial risks and risks associated with international expansion. Without a clear description of how Collin evaluates and integrates financial and market expansion risks, it is difficult to assess the effectiveness of Collin's plans to achieve market leadership.

- Although a Human Resource Capabilities Assessment is referenced in Figure 2.1-2 and Area 5.2a, the process for how this information is systematically used in the planning process to develop human resource goals is not described. For example, no strategic objectives or plans are presented for developing human resource capabilities. Without this information, it is difficult to assess how Collin effectively plans to achieve "leadership positions of excellence" for EOs.

- It is not clear how the 5 elements of the Strategic Business Plan are translated into the 12 key strategic objectives. Without a description of how Collin establishes the objectives shown in Figure 2.1-3 and takes into consideration key factors such as the competitive environment, assessment of future technology, potential risks, and various capabilities, it is difficult to assess the effectiveness of the process in ensuring alignment of actions to meet Collin's strategic intent.

- The Strategic Business Plan does not appear to reflect all of the Core Values, specifically the focus on suppliers. Since suppliers are key to Collin's ability to provide quality circuit boards in a timely manner, it is difficult to assess the effectiveness of the planning process if the focus on suppliers is omitted from the Strategic Business Plan.

2.2 Strategy Deployment

STRENGTHS

- As part of the PPP, action plans are developed on an ongoing basis to ensure rapid response to changes in customer, market, and technology strategies. The Red Book serves as an electronic record of the action plans and related performance metrics. The link between the Strategic Business Plan document and the Red Book provides real-time visibility of objectives, action plans, and related measures throughout Collin and promotes ongoing alignment.

- Resources are allocated as progress against goals is reviewed and mid-course changes in direction and resource requirements are identified to ensure effective and efficient use of capital and human resources.

- The Performance Management Cycle (Figure 5.1-2) is a cascading process that begins with the Leadership Team and communicates and aligns strategic objectives, action plans, and performance measures to EOs at all levels of Collin. The quarterly All Hands Meeting is also used to communicate direction to all EOs.

OPPORTUNITIES FOR IMPROVEMENT

- Although top-level goals are shown in Figures 2.1-3 and 2.2-1, it is not clear how the Performance Management Cycle results in goals, action plans, and performance reviews for business areas below the level of the Red Book. Without a clear description of how Collin manages goal-setting and performance at all levels of the organization, it is difficult to assess the effectiveness of the business areas in adequately supporting the achievement of company objectives.

- Although human resource capabilities are identified as critical enablers of Collin's strategic intent, Collin does not provide human resource plans and requirements. Without a full description of human resource plans, it is difficult to assess the effectiveness of Collin in recruiting, developing, and retaining a work force capable of achieving Collin's mission and objectives.

- A limited number of performance measures identified in the Balanced Scorecard (Figure 1.1-4) are provided in Figure 2.1-3, making it difficult to evaluate the effectiveness of the performance measurement process in tracking progress against the 12 objectives.

- Although performance projections are provided for 1999, neither projections for company performance nor projections for competitive or benchmark performance against key measures are provided. Without this information, it difficult to evaluate how Collin plans to maintain competitiveness in the future, especially given its plans for expansion and its goal to achieve leadership positions in all key stakeholder areas.

3.1 Customer and Market Knowledge

STRENGTHS

- Collin divides customers into four key business segments in the printed circuit board market: Government, Commercial, Advanced Technology, and Industrial Products (Figure 3.1-1). Customers are grouped based on product functionality and use, customer requirements, and benefits. Market data are collected from current customers, customers of competitors, and potential customers and markets to determine the segmentation and ensure responsiveness to specialized market needs.

- A variety of methods is used to learn from customers and potential customers, including employee follow-up on current orders, customer satisfaction surveys, customer focus groups, lost customer studies, trade show market interest studies, and participation in customer strategic planning. The use of multiple approaches provides a broad spectrum of information that helps Collin stay current with changing customer requirements.

- Reciprocal partnering agreements have been established with customers for obtaining information on needs on an ongoing basis. Customers participate in the PPP, and, in return, Collin is involved in the customers' planning and design processes. This is particularly useful in the Advanced Technology and Commercial market segments, because these markets "push" breakthrough technological development. Partnerships also include customer involvement in Collin's internal Baldrige assessment, which provides another avenue for obtaining input on the importance of product and service features, enabling Collin to understand how to best address these features.

- Business Segment Managers review listening methods, their deployment, and the learning process in order to make refinements. They assess and update surveys, review data and analysis processes to determine procedural changes, and select new approaches for gathering data. Evidence of refinements includes changing from an annual customer satisfaction survey process to a continuous process with improved efficiency, turnaround, and market awareness.

- Key competitor activities and lost business revenue are monitored to understand customer preference and the drivers of customer retention. Among the methods used are the collection of data from a cross-section of non-customers to determine drivers of vendor preference; employee data collection of information regarding changing industry, segment, and customer requirements; surveys; reviews of industry publications; and market studies. The variety of methodologies and sources for gathering data provides a continuous, validated, and reliable flow of information about customers and competitors and allows Collin to anticipate and respond to changing market needs in a timely manner.

OPPORTUNITIES FOR IMPROVEMENT

- Although participation in conferences, trade shows, and customer strategic planning is used to obtain information on changing requirements, how Collin uses this participation to determine key product features and their relative importance to customers for the purposes of current and future marketing, product planning, or other business development is not described.

- It is not clear that Collin assesses differences in market segments/customer groups with respect to the determination of key requirements and drivers of purchase decisions. For example, it is not defined how Collin considers North American, Asian, and future European geographical market segments to determine what the unique needs of customers in these markets might be. Additionally, it is not clear that Collin identifies the needs of end users as part of its analysis of customer requirements (e.g., in the Commercial market segment, where Collin's products are resold to other businesses). This makes it difficult to assess whether the unique needs of all types of customers in different markets are being met.

3.2 Customer Satisfaction and Relationships

STRENGTHS

- Customer access is provided through personal points of contact and technology in order to accommodate customer preferences and ensure speed when needed. Specific sales coordinators are assigned as single points of contact, work during hours that are consistent with the client's local time zone, and are recruited from appropriate country regions to prevent language difficulties (international sales coordinators). Among the technologies available are the Internet and personal data assistants with e-mail, voicemail, paging, data exchange, and EDI through the CAIN system.

- Customer contact teams define and improve customer service standards by aggregating inputs from direct customer contacts, customer survey ratings, customer feedback, and benchmarks. Performance feedback is provided by the CAIN system to individuals, while customer contact teams review performance weekly. Business Segment Managers provide improvement suggestions based on their reviews so that needs can be met and standards and behavior can be continuously improved.

- Collin has a systematic, closed-loop, computer-based complaint system providing immediate recording of complaints, instant routing to affected sales coordinators, and an automatic reminder process to ensure that employees are aware of open issues. An escalation process is in place to provide additional resources to employees with issues they feel they cannot resolve within 24 hours. Data are organized and stored in the CAIN system, which enables Collin to aggregate and integrate information, review financial impacts, share information with employees, and provide information for developing process improvements to process teams.

- Collin uses several means to build and maintain positive relationships with customers, including encouraging customer participation in the product design process, using specially assigned sales coordinators to get to know customer needs, and assigning Business Segment Managers to focus on segment-specific needs. Historical data on any customer relationship are available to EOs via the CAIN system, providing information about customer needs and experiences with the customer. Collin invites customers to participate in the Baldrige assessment process, engaging them in defining improvements Collin can make to the business relationship.

- Collin obtains customer satisfaction data via internal and independent external surveys. The satisfaction survey obtains feedback on performance for customer segment requirements. Customers also rate the importance of requirements and compare Collin's performance to other manufacturers. The performance factors measured have been determined to be predictive of overall customer satisfaction and dissatisfaction helping Collin focus on improving important attributes.

- The CAIN system provides computer prompts to customers and employees to ensure timely follow-up and feedback after a recent customer transaction. CAIN automatically notifies sales coordinators when a shipment occurs and also sends a tickler to customers requesting they log on to fill out a survey in CAIN. Sales coordinators follow-up via e-mail, fax, or phone within 24 hours to ensure customer needs are met and take action, if necessary. Response time is tracked relative to service standards, and less-than-satisfactory ratings from customer surveys automatically proceed to complaint resolution, ensuring responsiveness and action to meet customer needs.

OPPORTUNITIES FOR IMPROVEMENT

- While Collin presents examples of customer service standards that emphasize follow-up and problem resolution, the complete set of standards is not presented, making it difficult to determine whether standards are consistent with Collin's shift to a prevention-based environment. Also, it is not clear how standards are deployed in a timely manner, given that customer contact teams revise them quarterly, yet employees are on an annual performance management cycle.

- Although the Business Segment Managers review the customer relationship approaches annually, it is not clear whether there is a systematic approach for measuring the performance of the customer relationship methods to determine the effectiveness of each method.

4.1 Measurement of Organizational Performance

STRENGTHS

- Collin uses a performance measurement system to assess performance at all levels of Collin and to drive planning and improvement. The system is deployed through CAIN (Figure 4.1-1) across the organization. CAIN, a distributed information system, provides for the input, tracking, and analysis of performance and predictive data that are aligned to Collin's goals, short- and longer-term plans, and strategic and day-to-day actions and decisions.

- Key performance and predictive measures for customers, suppliers, EOs, quality, costs, competition, and compliance are organized and reported through the Balanced Scorecard (BSC) process. BSC indicators (Figure 1.1-4) are selected and used by the Leadership Team to review and analyze companywide performance and to assess progress against goals. Two criteria are required for selection as BSC measures: (1) they must be cost, time, or quality related, and (2) they must be either preventive and/or link to a strategic improvement strategy.

- Comparative data from competitors and best-in-class companies are tracked for lagging indicators, and reviews are conducted to evaluate Collin's relative performance position. Semiannual research is conducted by the Benchmark Team to identify comparative and competitive information and data. Benchmark information and data are obtained from benchmarking associations, surveys, customers, websites, and an independent consulting firm.

- Collin ensures data reliability through several approaches, including the identification of source inputs and analyses of predictive data through reviews and database system checks and against comparisons, benchmarks, and supporting evidence. Most performance data are automatically analyzed in the CAIN system to ensure data integrity.

- A yearly survey on the information system is conducted to improve information gathering and analysis tools. Collin also participates in an annual Best Information System Plants Competition to evaluate how its system compares with others in the United States. To improve its approach to benchmarking, the Benchmark Team conducts a review twice a year to identify best practices and to compare itself to the companies it considers best in class.

OPPORTUNITIES FOR IMPROVEMENT

- Although Collin participates in annual information surveys and an annual competition for best information systems in plants across the United States, the process for how the organization improves the effectiveness of its performance management is not described. Evidence of cycles of refinement to the CAIN performance system is not provided, making it difficult to assess the effectiveness of the feedback, benchmarking, and survey approaches used to keep the system updated and capable of supporting company goals.

- Other than data reliability checks on the accuracy of information in CAIN, there is no evidence that Collin ensures the continued availability of data in the event of a data security problem, disaster, or system failure. Since the CAIN system is critical to all aspects of the business, it is difficult to assess how Collin provides for disaster recovery and business continuity.

4.2 Analysis of Organizational Performance

STRENGTHS

- A 5-Step process (Figure 4.2-1) is used by Stakeholder Teams to analyze BSC measures prior to the bimonthly performance review conducted by the Leadership Team. The process includes data review, comparative and gap analysis, and identification of opportunities to improve performance against short- and longer-term goals. This approach ensures that both strategic goals and short-term performance objectives, including competitive performance position, are regularly monitored and tracked.

- EOs analyze and trend organizational performance data on a daily and exception basis. For example, delivery schedules are proactively managed as a result of the exception-flag warning system that triggers an alert on emerging delivery problems. When trigger settings are exceeded, "action-requesting"exception reports are generated in the CAIN system to ensure timely deployment of a corrective action.

- Alignment of action plans to strategies is maintained by linking output measures directly to leading BSC indicators. This linkage provides a direct path between process performance results and comparisons against the BSC indicators. As the BSC measures are aligned with strategic goals and objectives, Collin is able to determine current relative position to industry, competition, and benchmarks and also to evaluate its position relative to longer-term goals and objectives.

OPPORTUNITIES FOR IMPROVEMENT

- While BSC measures are reviewed regularly by the Stakeholder Teams and the Leadership Team, how Collin systematically evaluates and assesses operational performance against plan using measures that are tracked below the BSC level is unclear.

- Collin has stated that a key capability for achieving the strategic objective of product cost reduction is the ability to analyze the cost of opportunities and operational processes. While some data are collected, Collin appears to be in the early stages of developing this decision-making capability.

5.1 Work Systems

STRENGTHS

- The Human Resource Council oversees both the cross-functional team system (Figure 5.1-1) and EO support climate. For example, Stakeholder Teams encourage EOs to contribute to the achievement of company goals, and Process Support Teams (PSTs) promote cooperation and collaboration through cross-functional project teams. To ensure that Stakeholder Teams and PSTs keep up with changing business needs, a comprehensive team development process (Figure 5.1-3), including 96 hours of training, is required for all managers and EOs.

- A three-step Performance Management Cycle (Figure 5.1-2) links business plans and strategies from the PPP to individual EO performance. Individual development plans for educational, learning, and work experiences are based on an assessment of knowledge, skills, and competencies required to effectively perform on the job and support Collin's objectives and the individual's career objectives. EOs receive performance reviews against their individual development plans on a quarterly and annual basis.

- Compensation is tied to performance, and a Compensation Committee manages the process. The amount distributed to leaders and to each EO is based on a formula that is mutually agreed upon by the EOs of the organization. Cash incentives are awarded to all EOs for improvement and innovation ideas.

- Several approaches are used to effectively communicate, share knowledge, and reinforce the direction and Core Values of Collin across all levels of employees and all facilities within and outside the United States. These include quarterly All-Hands Meetings, roundtables, staff meetings, stakeholder meetings, e-mail, and a website. Also, team members are co-located as frequently as possible, teleconferencing is used extensively, and the CAIN system facilitates information transfer.

- Collin uses an Attribute Model to enhance the effective selection of new hires. Candidates are evaluated against an array of desired attributes, including both technical and innovative skills and "soft" attributes such as team orientation, diversity, and personal and professional motivation. The CAIN system enables the organization to track results and to revise the model to reflect changes in competency and skill requirements.

OPPORTUNITIES FOR IMPROVEMENT

- The process for how Collin's team approach effectively promotes rapid response and flexibility to all customers and markets is not described. Without this information, it is difficult to assess the extent of responsiveness and flexibility that teams are capable of providing within the constraints of a 24-hour-a-day, 7-day-a-week operation schedule.

- The Leadership Team refocused the organization to support team-based activities. However, it is not clear how the Performance Management Review process (Figure 5.1-2) supports a team-based work structure. Also, it is not evident that Collin recognizes team contributions or accomplishments. Without recognition for both individuals and teams, it is difficult to assess the effectiveness of Collin's reward and recognition approach in reinforcing performance expectations.

- Although a list of attributes for potential new hires has been developed, the process for attracting, identifying, selecting, and hiring and retaining new employees in all market countries is not defined. This makes it difficult to assess Collin's ability to support expansion strategies by developing a competent work force.

- Since the formulas for the distribution of compensation based on performance are not provided, it is difficult to assess the effectiveness of the compensation system in linking pay for performance at all levels of employees and across different cultures.

5.2 Employee Education, Training, and Development

STRENGTHS

- Education, training, and EO development programs are based on an annual Human Resource Capabilities Assessment and the Baldrige assessment and are supplemented by external inputs from preferred suppliers, customers, market surveys, the government, industry, and third-party sources. Short- and longer-term needs for acquiring specific knowledge and capabilities are integrated into the PPP, ensuring that education and training programs align to the Core Values and support Collin's move from a skill-oriented to a knowledge-oriented work force.

- Functional career path structures have been developed for five employee categories: technical, managerial, operations, quality management, and administrative. Employee development and education and training programs, which are linked to career path design, enable Collin to more effectively match employment needs with recruitment and retention efforts.

- Several approaches are used to deliver education and training. In addition to company classes aligned to the five career paths, Collin provides coaching, self-directed learning, on-the-job training, computer-based training, special projects, and team assignments. In order to support the geographic challenges of a multinational work force, these programs are supplemented by offerings at local colleges, third-party and vocational centers, and distance learning opportunities.

- Collin has developed and implemented a training development program called "Quality Leading the Way to Tomorrow." From new employee orientation through progressive course work, emphasis is placed on learning Statistical Process Control, metrics, and quality management and benchmarking techniques to ensure rapid response to changing business requirements.

- A systematic and comprehensive approach is used to ensure that internally delivered education and training support the needs of EOs and to achieve the shift from a skill-based to a knowledge-based work force. Pilots are conducted on formal programs, and post-course and post-training feedback is used to improve the quality of the programs.

OPPORTUNITIES FOR IMPROVEMENT

- A description of how Collin designs education and training is not provided. This makes it difficult to determine how input from external sources and needs identified in various assessments are incorporated into course designs to ensure that company goals and EO career development are achieved.

- A plan identifying proficiency requirements for each employee category and the training required to develop a work force capable of meeting future market needs is not provided. Without a clear understanding of competency and training requirements, it is difficult to understand how Collin plans to achieve its mission to provide leadership excellence to all stakeholders.

5.3 Employee Well-Being and Satisfaction

STRENGTHS

- Several programs help to maintain a safe and healthy workplace: (1) mandatory safety and ergonomic training; (2) voluntary self-audits against EHS&S standards; (3) Emergency Response Teams; and (4) line management ownership of safety and security initiatives. Fifty minimum standards govern work activities (Figure 5.3-1) and are the basic criteria for self-audits within Collin. These approaches have enabled Collin to maintain one of the lowest rates in the industry for on-the-job injuries.

- The Human Resource Council provides special services and programs that are adapted to the needs of employees at both facilities. These programs include special interest clubs, recreational centers, fitness facilities, wellness programs, child care for EOs and for local preferred suppliers, an Employee Assistance Program, tuition reimbursement, on-site dry cleaning, adoption assistance, an on-site medical nurse, and others. In addition, Collin sponsors many activities during the calendar year to promote the family atmosphere. Evaluation of support services is part of regular Leadership Team review cycles and is based on employee suggestions.

- A third-party administered survey has been used since 1989 to identify the factors that contribute to employee satisfaction, well-being, and motivation. The survey is conducted quarterly and provides information to the Human Resource Council and the Leadership Team on the relative importance of key attributes to employee satisfaction. The use of focus groups, exit interviews, and open communication forums supplements the survey process to identify work environment issues.

OPPORTUNITIES FOR IMPROVEMENT

- The factors contributing to employee well-being are not defined. Without a clear understanding of these factors, it is difficult to assess whether Collin's approach for evaluating and improving employee well-being is systematic and fact-based.

- Methods for determining employee satisfaction focus on short-term issues. Collin does not appear to relate results for employee well-being, satisfaction, and motivation to its business results and objectives. Long-term strategies and goals have not been translated clearly into action plans that can drive a more satisfied work force to achieve a higher level of performance.

- It is unclear how Collin uses other indicators such as employee turnover, absenteeism, grievances, and productivity to assess and improve employee well-being, satisfaction, and motivation. Therefore, it is difficult to determine how employee factors affect performance and how human resource results are used to set performance targets.

6.1 Product and Service Processes

STRENGTHS

- A systematic Product Development Process (PDP) (Figure 6.1-1) is used to meet customer requirements for cutting-edge technology products while reducing cycle time. This process identifies requirements by business and customer segment and verifies customer, supplier, and manufacturing specifications through the Marketing Requirements Document (MRD) process. Dedicated Integrated Product Development Teams (IPDTs) integrate the PDP with the five-step product life cycle process (Figure 6.1-2). During all phases of development, input from customers and suppliers is supported by analyses such as Failure Mode and Effect Analysis and Quality Function Deployment.

- All information collected during design and production is maintained on the CAIN system. The system is capable of producing prototypes overnight and producing orders within five days based on changes made directly into the system by customers, company engineers, and IPDTs and Process Support Teams (PSTs). Deployment of information via CAIN ensures timeliness of information transfer across the organization and supports Collin's goal for a paperless environment.

- Technology plays a key role in the management of production and delivery processes such as multilayer board production, a proprietary Chemically Bonded Deposition Process (CBDP), Cpk process control, analytical testing, and bar coding for inventory control and shipping. Through the innovation of the CBDP, the new design results in a lighter, more reliable circuit board for the Advanced Technology customers, thereby meeting key requirements for that business segment.

- All processes are designed to control limits of a minimum Cpk of 2.0. By utilizing a process design that is better than or within the design tolerances, Collin ensures that products meet customer requirements.

- A Continuous Improvement Process (Figure 6.1-5) controls production processes while allowing for continuous improvements through the use of a 5-Step Analysis Process (Figure 4.2-1). The CAIN system helps control processes while allowing for reliable and timely information sharing between the Nashville and Koga facilities.

OPPORTUNITIES FOR IMPROVEMENT

- Although the CBDP is an example of how new technology resulted in a product specifically designed to meet the Advanced Technology customer requirements, the process for how new technology is developed and used in product and production system design is not sufficiently described. Without a clear description, it is difficult to determine whether there is a systematic approach for identifying, developing, and introducing new technology, which is a key factor in achieving Collin's strategic objectives.

- While examples of design and process improvements are described, it is not clear how Collin systematically evaluates and improves the effectiveness of its overall approach for product and process design. For example, information concerning improvements and "lessons learned" is available via CAIN; however, it is unclear how Collin uses this information to drive improvement and whether Collin evaluates the effectiveness of the approach.

- It is not clear how Collin selects key performance characteristics (Figure 6.1-3) for its production processes to ensure that product performance meets customer requirements. It is also unclear how Collin establishes limits for those production processes that it considers critical.

6.2 Support Processes

STRENGTHS

- Key support processes are defined as safety, environmental and waste-handling processes, information technology management (CAIN), maintenance and material management, asset and financial management, and outsourcing operations. Support process owners, requirements, and indicators for the nine support processes are identified in Figure 6.2-1.

- Support processes are deployed and managed across Collin by Process Support Teams (PSTs) and the respective functional departments using the same approaches employed for production processes. During the Perennial Planning Process, EOs, preferred suppliers, and internal and external customers provide inputs concerning support processes. PSTs use CAIN to analyze these inputs to establish measures and targets for each process characteristic.

- Each support process uses the same criteria as production and design processes for a Cpk of at least 2.0. The PSTs have the responsibility for continual improvement of support processes. Using the Continuous Improvement Process (Figure 6.1-5), the PSTs utilize inputs from customers, EOs, suppliers, benchmark processes, and local universities. All support processes are documented with process flows and are contained in the CAIN system for internal and external review by both customers and suppliers. Results of support processes are posted in the Balanced Scorecard system, and output measures are available for EOs to review and to determine how processes are performing.

OPPORTUNITIES FOR IMPROVEMENT

- While the PSTs manage support processes, how they design support processes using the PDP methodology (Figure 6.1-1) is not clearly described. Additionally, how input from external and internal customers is used to determine key requirements for support processes is not described, making it difficult to determine how Collin systematically designs support processes to ensure that it meets customer requirements.

- It is not clear that all key support processes have been identified. For example, no personnel or sales and marketing processes are listed in Figure 6.2-1, yet both of these areas are of importance to the overall success of Collin. Additionally, it is not clear how management and the process owners monitor the ongoing performance of key support processes.

- Although Collin states that each support process is measured against a Cpk goal of 2.0, there is no indication that in-process measures exist to assess quality, timeliness, efficiency, and cost of support processes to the same level of performance as output measures shown in Figure 6.2-1.

- It is unclear that improvements have been made to key support processes using the methods described, such as the Continuous Improvement Process (Figure 6.1-5) or the 5-Step process used by the PSTs.

6.3 Supplier and Partnering Processes

STRENGTHS

- Collin identifies key products and services purchased from suppliers as raw materials, such as copper-clad sheets; inner-layer bonding material; drill bits; chemicals; copper, lead, and gold; computer software and hardware; back-up power systems; and employee education and service support.

- Collin uses a supplier management system that eliminates incoming inspections of preferred supplier materials and enhances communications with suppliers through CAIN. Both manufacturing and service suppliers are encouraged to become preferred suppliers based on targeted performance in each of the five key supplier requirements. Preferred suppliers have full access to CAIN, participate in IPDTs, receive company training programs, participate in the Perennial Planning Process, and, most importantly, remain on the cutting edge of technology by working closely and sharing benchmark information with Collin.

- Supplier performance requirements for manufacturing suppliers and service providers are uniquely tailored for quality, cost, availability and delivery, technology, and continuous improvement. These requirements are defined for supplier partners and are measured in the CAIN system as part of the preferred supplier process. Since quality, cost, and availability/delivery have a direct impact on Collin's ability to satisfy key customer requirements, this approach aligns Collin's preferred supplier base to its strategic objectives.

- Through the deployment of CAIN to preferred suppliers, Collin ensures that reliable, real-time performance information enables supplier performance and improvement management. Suppliers are responsible for using the same Continuous Improvement Process (Figure 6.1-5) as Collin in providing equipment and technology supporting Collin's key strategic objectives.

OPPORTUNITIES FOR IMPROVEMENT

- Although Collin asks suppliers to use the Continuous Improvement Process (Figure 6.1-5) to improve supplier performance, there is no evidence of any cycles of evaluation and refinement of the approach Collin uses for managing its key suppliers and partners. Without more information regarding the application of the Continuous Improvement Process or other systematic refinement processes to supplier management processes (e.g., date used, examples of improvements), it is difficult to understand how supplier management processes are improved to ensure that suppliers keep up with changing business needs.

- The process for how Collin works with suppliers to manage quality, cost, availability and delivery, technology, and continuous improvement is not fully described, making it difficult to assess how Collin evaluates and improves supplier performance.

- Collin requires preferred suppliers to achieve a rating of 90% for on-time delivery and quality. However, these performance levels are inconsistent with Collin's performance and goals for these two key success factors, making it difficult to evaluate how Collin effectively meets customer requirements through preferred supplier management.

- Although 50% of the suppliers are currently not preferred suppliers, it is not clear how Collin manages that supplier performance meets requirements. Without a clear description of how Collin manages non-integrated suppliers, it is difficult to identify whether the supplier management process is systematic and proactively ensures that the products and services of these suppliers do not adversely impact the overall requirements of Collin and its customers.

7.1 Customer Focused Results

STRENGTHS

- Performance trends for the direct measures of customer satisfaction and dissatisfaction demonstrate sustained levels of improvement for Collin overall and for all four market segments since 1994. Favorable results include overall customer satisfaction (Figure 7.1-1), percentage of customers dissatisfied (Figure 7.1-2), and percentage of customer complaints per 10,000 boards delivered (Figure 7.1-3).

- Since 1994, good-to-excellent performance is sustained in the measures tied to customer requirements for quality, on-time delivery, and reliability. These include customer satisfaction with product quality (Figure 7.1-5), percent of products delivered on time (Figure 7.1-7), and number of claims after installation (Figure 7.1-8).

- Comparisons provided for overall customer satisfaction and complaints (parts per million) (Figure 7.1-10) indicate that Collin is outperforming its major competitors, thereby providing a significant advantage in the marketplace. Since 1996, results are better than competitors in the areas rated most important by its customers. For example, comparative overall satisfaction results, product quality ratings, and on-time delivery show favorable gaps since 1996. The current level of customer satisfaction with product quality is 100% compared to 85% for the best competitor.

- The success of Collin in building strong customer relationships is reflected in the favorable trends for indirect measures of customer satisfaction (Figure 7.1-4). Since 1994, win ratios for new and repeat business have increased 8% and 3%, respectively; referral and retention rates are sustained at 100%; and there has been a 5% increase in the number of customers who deal with Collin exclusively.

- The percentage of boards accepted by customers (Figure 7.1-6) shows general improvement in 1998 for the Koga facility at 99.35% and sustained performance for the Nashville facility with a high of 99.95%. Compared to the best competitor's field quality performance by segment, Collin's quality index of 100% (Figure 7.1-9) is noteworthy.

OPPORTUNITIES FOR IMPROVEMENT

- The results presented do not address current levels or trends for several key customer requirements. For example, competitive price, short delivery time, rapid response, cutting-edge technology, and stable dimensions (Figure 3.1-1) are not provided, making it difficult to assess the effectiveness of Collin in meeting all customer needs and expectations.

- With the exception of board acceptance rates (Figure 7.1-6) and product reliability results (Figure 7.1-8), customer satisfaction data are not presented by geographic segment or location, making it difficult to determine how Collin uses data to improve performance in key areas. For example, since revenue in Europe has been flat for the past two years and Collin plans to expand overseas business, the lack of customer satisfaction information makes it difficult to understand how Collin plans to achieve its goals.

7.2 Financial and Market Results

STRENGTHS

- Current levels and five-year trends for financial measures identified in the Balanced Scorecard are good to excellent with most improvement trends sustained. Revenue has grown to six times the 1991 performance and 2.75 times the industry average (Figure 7.2-1), and a favorable growth rate is reflected in all customer segments (Figure 7.2-2). Revenues captured in Europe, North America, and the Far East demonstrate success toward achieving Collin's objective to service global markets (Figure 7.2-3). Significant improvement is demonstrated in the profit growth rate (Figure 7.2-4), growth in return on net assets (Figure 7.2-5), increase in return on revenues (Figure 7.2-6), and the times interest earned (Figure 7.2-12). Supplier and inventory performance show sustained and favorable results for net asset turnover (Figure 7.2-7) and asset reinvestment rate (Figure 7.2-8).

- Comparisons provided for financial indicators demonstrate industry leadership in several areas important to company performance. Inventory turns (Figure 7.2-9) performed at three times the industry average. For example, in 1998, for a total of $600 million in sales, only 15 claims were filed, and product reliability of competitors has been surpassed for the past three years (Figure 7.2-11).

- Collin's market share (Figure 7.2-14) increased in each business segment since 1994 and has performed favorably compared to the best competitor since 1996. Growth is attributed to gaining new and repeat business, maintaining current customers (Figure 7.2-16), growing globally (Figure 7.2-15), and outperforming the best competitor (Figures 7.2-14 and 7.2-16).

OPPORTUNITIES FOR IMPROVEMENT

- Although Collin is the market share leader (Figure 7.2-14), it is not evident how Collin performs in comparison to its competitors within each of its key markets. Without an understanding of current and trend market positions by business segment for each area, it is difficult to assess how Collin effectively evaluates its performance relative to the competition and keeps plans current with changing competitive factors.

- Although Collin identifies the development of new technology as one of the business factors key to its continuing market leadership, the percentage of sales from new products is declining in Government and Industrial Products, two of the four market segments.

7.3 Human Resource Results

STRENGTHS

- The results for EO satisfaction (Figures 7.3-1 and 7.3-2) indicate that since 1994 Collin has achieved satisfaction in the three areas most important to employees: achievement, recognition, and work content. EO satisfaction with opportunities for personal development shows a sustained improvement trend over the past five years (Figure 7.3-3). The high degree of EO satisfaction with training (Figure 7.3-4) reflects Collin's success in providing employees the knowledge and skills required to achieve overall work and personal goals.

- The current high level of satisfaction for employee services resulted from five years of improvements and programs implemented by the Human Resource Council. For example, satisfaction with programs such as ACE activities in Koga, family enrichment in Nashville, and child care achieved a rating of five on a five-point scale (Figure 7.3-5).

- Since 1994, improvement trends are sustained for the EHS&S Audit results in both Nashville and Koga (Figure 7.5-8), reflecting the importance Collin places on keeping the work force safe and healthy. For example, the number of hazards identified improved by 50%. Zero incidents have been reported for OSHA injuries, and there have been no reports of lost workdays and workers' compensation claims (Figure 7.3-6), which is better than industry performance. Accident rates are significantly better than the national average and the benchmark (Figure 7.5-4).

- The results presented indicate that Collin has made significant progress in certifying teams on skill-level achievement in order to successfully support a team-based culture. The commitment to teams is evident in the fact that although the number of teams nearly doubled since 1994 with 100% of EOs participating on teams, 75% of EOs participating on teams are certified on coaching skills and 35% on support skills (Figure 7.3-7).

- A favorable decreasing trend in the employee turnover rate reflects a stable work force since 1994. For example, Collin's employee turnover rate is 7.6% compared to 21.3% for the industry average in 1998 (Figure 7.3-8).

OPPORTUNITIES FOR IMPROVEMENT

- Although employee satisfaction results are favorable (Figures 7.3-1, 7.3-2, 7.3-3, and 7.3-4), results are not presented by type or level of employee, making it difficult to understand how Collin effectively addresses the diverse needs of a culturally and geographically dispersed work force.

- Comparisons for employee satisfaction measures are not provided. Also, limited comparisons or benchmarks are identified for key human resource indicators. Without comparative data, it is not clear how Collin assesses human resource results against its competitors and world-class organizations or how it identifies opportunities to achieve its goal for a leadership position.

- Results for work environment standards (Figure 5.3-1) are not provided, making it difficult to evaluate the effectiveness of Collin's approaches for ensuring safety and well-being for specific types of work site concerns, such as ventilation, lighting, and atmospheric pressure.

- Although the number of technical and administration suggestions has increased slightly since 1994, the number of EO and management suggestions (Figure 7.3-9) has declined. Collin neither explains the reason for these trends nor discusses how they relate to its business goals.

7.4 Supplier and Partner Results

STRENGTHS

- The results for supplier performance in several key measures demonstrate improvement since 1994. These include product and support material quality (Figures 7.4-1 and 7.4-2), on-time delivery (Figures 7.4-3 and 7.4-4), and attainment of product and support material cost goals (Figures 7.4-5 and 7.4-6). Results for most of these indicators are equal to or better than the benchmark at both facilities.

- Performance ratings for both preferred and other suppliers improved over the past five years. For example, preferred suppliers, who represent 50% of all suppliers, achieved a 1998 rating of 98% (Figure 7.4-8). These results suggest an improvement in Collin's ability to meet key customer requirements through supplier relationship management.

- Since 1994, the percentage of suppliers accepting applicant training when offered increased by 50% (Figure 7.4-10), reflecting the effectiveness of this approach as an incentive for suppliers. This improvement furthers Collin's focus on technology and continuous improvement and its goal to achieve 100% preferred suppliers.

OPPORTUNITIES FOR IMPROVEMENT

- It is difficult to assess the ability of the supplier management program to support Collin in delivering against customer requirements. On average, only two suppliers achieve the preferred supplier status each year, which is short of the goal of five per year (Figure 2.1-3).

- Although quality, cost, and delivery results are reported (Figures 7.4-1 through 7.4-6), results for technology and continuous improvement are not provided. Without these results, it is difficult to understand how Collin monitors and evaluates supplier performance in these key dimensions of supplier performance that contribute to its ability to satisfy key customer requirements.

- Cost and cost-reduction results achieved by suppliers are not provided. For example, results for material costs (Figures 7.4-5 and 7.4-6) do not indicate the actual cost reductions that Collin achieved through its supplier base. Without these results, it is difficult to assess the impact of supplier performance on price and financial performance.

- Although a benchmark level is provided for quality, on-time delivery, and material cost (Figures 7.4-1 through 7.4-6), it is not clear whether the benchmark is for the industry average or best competitor performance. Also, comparative results are not provided for supplier performance indicators identified in the Balanced Scorecard (Figure 1.1-4). Without benchmark or comparative information, it is not clear how Collin evaluates its success in achieving leadership excellence for this key stakeholder.

7.5 Organizational Effectiveness Results

STRENGTHS

- Performance against the key goals for cycle time, cost, and schedule performance has improved since 1994. For example, cycle time (Figure 7.5-1) and production cost improvements (Figure 7.5-2) are at or near benchmark and company goal levels. Significant improvements are evident in Collin's ability to meet customer delivery schedules (Figure 7.5-7). As a result of decreasing product development cycle time from 10 to 2 days, compared to the 5 days of cycle time required by its competitor (Figure 7.5-11), Collin has been able to react favorably to new and changing customer requirements while maintaining competitive price levels.

- Collin's emissions system has been recognized as a model system by industry publications of Tennessee and Japan. Favorable and sustained improvement results in the key environmental measures (Figures 7.5-13 through 7.5-16) reflect Collin's success toward achieving a leadership position of environmental excellence. Collin has achieved world class performance levels by reducing emissions to the atmosphere to 0.1 tons of contaminants per year (Figure 7.5-13) and eliminating all manufacturing solid waste (Figure 7.5-16).

- Favorable results are provided for most indicators related to efficient and effective operations and production capabilities. For example, the operational effectiveness measure and uptime rate for production equipment (Figure 7.5-5) indicate favorable and sustained performance improvement. In 1998, the availability rate for information systems averaged 99.9% (Figure 7.5-3), which supports the focus on technology as a key objective of Collin.

- The number of processes achieving the Cpk value of greater than 2.0 has improved every year since 1994 at both facilities. Currently, Collin is 5% from achieving the goal to have 100% of production and support processes perform at the Cpk goal of 2.0 (Figure 7.5-12). Although no comparisons exist, Collin's goal serves as a stretch target to attain levels of process performance unequalled in the industry.

- Performance against Balanced Scorecard indicators for energy dead time (Figure 7.5-6), in-process sampling audits (Figure 7.5-9), and unit price improvement (Figure 7.5-10) demonstrate favorable trends, indicating that Collin is achieving its strategic goals in these areas.

OPPORTUNITIES FOR IMPROVEMENT

- Performance results for customer service standards identified in Figure 3.2-1 and for production process measures identified in Figure 6.1-3 are not provided, making it difficult to assess the effectiveness of Collin to evaluate and improve the services and processes contributing to customer satisfaction.

- Results are not reported for key risk management measures (Figure 1.2-1) including percentage of lead in blood, number of public health violations, percent of VOCs in air, and equipment use efficiency. Without results, it is difficult to understand how Collin effectively manages and decreases the risk to the community from the processes related to these measures.

- Several key measures, including energy dead time (Figure 7.5-6), planned schedule execution (Figure 7.5-7), and EHS&S Audit (Figure 7.5-8), do not have comparative results, making it difficult to assess Collin's performance relative to competitors.

- Although product development cycle time has improved from 10 days to 2 days (Figure 7.5-11), the rapid response goal to deliver prototype boards in 24 hours has not yet been achieved.

Baldrige National Quality Program

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